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CONSTRAINTS TO PARTICIPATION OF RURAL FARMERS IN ROOT AND TUBER CROPS EXTENSION SUB-PROGRAMME IN DELTA NORTH AGRICULTURAL ZONE OF DELTA STATE, NIGERIA

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ABSTRACT

The study analysed the constraints to participation of rural farmers in agricultural extension sub-programme in Delta North Agricultural Zone of Delta State, Nigeria. One of the barriers that contributes to lack of of success in agricultural development programmes is the non-participation of farmers in agricultural extension programme and activities. There is paucity of information regarding the constraints to participation of rural farmers in root and tuber crops extension sub-programme. The study therefore bridges this gap. The study specially investigated the socio-economic characteristics of the non-participating rural farmers and constraints to their participation in root and tuber crops extension sub-programme. A multi-stage random sampling procedure was employed to select the ninety-nine (99) farmers, which constituted the sample for the study. Questionnaire was used for data collection. Data collected were analyzed by percentages, means and chi square. Results showed that the mean age of the farmers was 46 years, 79.8% were literate with an average farming experience of 40 years and 52.5% were males. Findings revealed that the farmer's average income per annum was ₦148,500.00. The constraints of rural farmers participation in agricultural extension programme were poor incentive ($\bar{x}$=3.15), insufficient availability of land ($\bar{x}$=3.05), inadequate extension workers ($\bar{x}$=2.97), inadequate infrastructure ($\bar{x}$=2.95) and age ($\bar{x}$=2.62). There was statistically no significant relationship between the constraints influencing male and female rural farmers' participation in root and tuber crops extension sub-programme (X^2 cal 1.05 < X^2 table 14.07 at 0.05). It is recommended that to discourage non-participation of rural farmers, there should be an increase in the incentive for participation and in the number of extension personnel in rural communities.

Keywords: *Non-participation, Agricultural Extension, programme, Agricultural Production.*
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INTRODUCTION

Agricultural extension can be defined as an informal, out – of - school scheme of education intended to aid rural people to satisfy their needs, concern and desires. Adedoyin (2004) defined agricultural extension as a wide-ranging programme of service consciously put in place for expanding, strengthening and empowering the capacity of the current and upcoming farmers' farm families, communities, other rural economic operators (processors, marketers, rural agro-industrialists, farm mangers, farm labour force) and farmers' association with managerial and communication skills needed to succeed in farming and farm related occupations. The main purpose of agricultural extension is to facilitate farmers and rural families to make decent living, master unsurpassed way to hold their farms in line to improve their living conditions (Adereti and Ajayi, 2011). Ajayi (2009) stated that the goals of agricultural extension consist of transferring knowledge from researchers to farmers, advise farmers on their decisions, enabling farmers elucidate their goals and responsibility and to realize them and inspiring desirable agricultural development and rural guidance.

Ajayi (2011) defined agricultural extension programme as written long-range and annual working plan with explicit objective for agricultural development of an area by its community, assisted and guided very closely by trained and experienced local extension worker. Agricultural extension programme is a course of movement and statements of all pre-determined actions or products achievement through educational means.

Participation in extension is the process of communicating amongst men and women farmers and extension agents during which farmers take foremost role to analyze the situation to plan, propose, implement and evaluate developmental activities (Aref, 2011). Farmer's participation refers to the taking part or engagement in the activities within the rural areas. According to Subedi (2008), participation is a process of assisting disadvantaged people and women to get access to and control over resources or services related to training, farmer's tour, inputs and information needed to sustain and get better their livelihoods. Ajayi (2011) defined participation as an act of working with others in making value judgments and determining causes and actions within a social situation and structure.

To bring about rapid agricultural growth the country had since independence in 1960 embarked on various projects, programmes and activities in agriculture and rural community development. According to Zanna (2000) to enhance performance of the agricultural sector, government in Nigeria has introduced several projects and programmes for the purpose of agricultural and rural development. These include National Accelerated Food Production Project (NAFPP), which was initiated in 1972, River Basin Development Authority RBDA (1973), Agricultural Development Projects ADP (1975), Operation Feed the Nation OFN (1976), Green Revolution Programme (1980), Agricultural Credit Guarantee Scheme (1980), Nigerian Agricultural Insurance Scheme NAIS (1987), Better Life for Rural Women (1987), Primary Health Care PHC(1987), Nomadic education (1987), Family Support Programme (1993), Universal Basic Education (1993), Adult Literacy Programmes and National Fadama Development Project NFDP (1992). In recent years, Poverty Alleviation Programmes PAP

(2000), National Economic Empowerment and Development NEEDS (2004), National Special Programme for Food Security NSPFS (2003) were introduced. These programmes have agricultural extension and education components. These programmes were embraced by the people hoping that they would solve their problems of poverty. However, despite the government investment and donors support in agricultural development programmes, several of these programmes have not been able to achieve much in the part of rural poverty eradication and the agricultural sector has not shown significant improvement (Ajayi, 2001; Lele 1991; Ovwigho, 1985) because of several barriers (Kadiri, 1997).

It is important to note that one of these barriers that contributed to the inadequate levels of success in agricultural development programmes is the non-participation of farmers or farmer groups in agricultural extension programme and activities. Agricultural extension has many challenges including clienteles' non-participation in agricultural programme development and extension activities (Agbamu, 2011). World Bank (1993) recognized non-participation as a foremost rationale for failure of several development efforts in developing countries.

However, there is paucity of information regarding the constraints to participation of rural farmers in root and tuber crops extension sub-programme. The study therefore bridges this gap. Against this background, this study is designed to investigate the constraints that prevent the rural farmers from participating in root and tuber crops extension sub-programme in Delta North Agricultural Zone.

Objectives of the Study: The general objective of the study is to investigate the constraints to participation of rural farmers in the root and tuber crops extension sub-programme in Delta North Agricultural Zone of Delta State, Nigeria The specific objectives are to: (i) examine the socio-economic characteristics of the non-participant rural root and tuber crops farmers; and (ii) determine the constraints, which engender non-participation of the rural farmers in root and tuber crops extension sub-programme.

Hypothesis: The null hypothesis tested was:

Ho_1: There is no significant relationship between the constraints engendering male and female rural farmers' non-participation in root and tuber crops extension sub-programme.

METHODOLOGY

Study Area: The study was carried out in Delta North Agricultural Zone of Delta State, Nigeria.

Sampling Method and Sample Size: The respondents consisted of the Delta Agricultural Development Project (DADP) root and tuber crops sub-programme non-participants. A multi-stage random sampling procedure was utilized to select sample. Three (3) extension blocks (Ika North, Oshimili North and Aniocha North) were randomly selected out of the nine (9) LGAs in the Delta North Agro-ecological Zone. Three (3) cells (rural communities) were randomly selected from the nine (9) cells in each of the selected 3LGAs to give a total

of nine (9) cells. They are Umunede, Igbodo and Ute-okpu from Ika North, Okpanam, Ebu and Akuku Igbo from Oshimili North, Idumogo, Obompa and Ugbodu from Aniocha North. Eleven (11) root and tuber crops registered farmers from each cell were randomly selected from the nine (9) cells, which give 99 respondents.

Method of data collection and Measurement of Variables: Data were collected by using structured questionnaire complemented with personal interview schedule with the farmers. The questionnaire consisted of two main parts- socioeconomic characteristics and constraints which gave rise to the rural farmers non-participation in root and tuber crops agricultural extension sub-programme.

The items were measured by use of a four-point type rating scale

Method of Data Analysis: Data on socioeconomic characteristics were analysed by simple percentages. Data on constraints to rural farmers' non-participation in root and tuber crops extension sub-programme were analysed by use of means. The null hypothesis was tested by use of chi-square. The chi square was suitable because it tested the relationship between the constraints of male and female rural farmers' in the participation in root and tuber crops extension sub-programme.

RESULTS AND DISCUSSION

Respondents' socio-economic characteristics

Results of socio-economic characteristic in Table 1 showed that 57.6% of the respondents fell within age bracket of 41 to 50 years. This result shows that majority of the respondents who are in the productive and active age were involved in root and tuber crops farming. This agrees with the findings of Ovharhe (2014) in Delta state. In terms of educational level, majority of the respondents (79.8%) had attained a level equal to or greater than the primary school. With respect to gender, both males and females were involved in root and tuber crops cultivation. However, there were more males than females in the root and tuber crops enterprise. This agrees with finding of Oladoja *et al.* (2006) who stated that males dominated in agricultural activities. Marital status of the respondents showed that 64.6% of the farmers were married, which indicated that respondents had family responsibilities that needed financial commitment. This finding agrees with that of Ifejika, Akinbile, Ifejika and Oladeji (2008), who had stated that a high proportion of rural farmers were married. Thirty-four percent of the respondents had farm experience of 30-39 years. The average farm experience of respondents in this study was 40years, indicating that the root and tuber crops farmers were highly experienced. Majority of the respondents represented by 65.5% had farm size of between 1.1 to 1.5 hectares. The average farm size of respondents in the study area was 1.45 hectares. This indicates that the respondents were mostly small-scale producers. The result further showed that the average farm income of the respondents was N148,500.00 per annum; this indicates very weak earning power or income by the non-participants from root and tuber crops farming and that the respondents were mainly subsistence farmers.

Constraints to non-participation of rural respondents'

Table 2 shows the mean rating of constraints that give rise to non-participation of rural farmers in root and tuber crops extension sub-programme. The constraints, which engender non-participation of rural farmers in root and tuber crops extension sub-programme were poor incentive ($\bar{}$ =3.15), insufficient availability of land ($\bar{}$ =3.05), inadequate extension workers ($\bar{}$ =2.97), inadequate infrastructure ($\bar{}$ =2.95) and age ($\bar{}$=2.62). This revealed that poor incentive ($\bar{}$ =3.15) and insufficient availability of land ($\bar{}$ =3.05) were the major constraints, which give rise to rural farmers non-participation in root and tuber crops extension sub-programme. The implication of poor incentive as a major constraints is that, the incentive given to arable crops farmers for participation is poor and not encouraging, consequently not able to motivate rural farmers' to participate in root and tuber crops extension sub-programme. This agrees with findings of Aref (2011) that scarce incentives to participation constrained farmers participation. The implication of inadequate availability of land as a key constraint against rural farmers' participation is that, insufficient availability of land to carry out and expand root and tuber crops cultivation/production discouraged rural farmers' participation in the extension sub-programme. This result is in line with the findings of Nxumalo and Oladele (2013) who stated that many farmers were constrained to participate in agricultural project because of insufficient of land.

There is no significant relationship between male and female farmers' constraints to participation in the agricultural extension sub-programme.

The relationship between the constraints of male and female rural farmers' to participation in root and tuber crops extension sub-programme was analysed using Chi-Square (X^2). The selected constraints were poor incentive, insufficient land availability, non-membership of co-operative society, inadequate extension workers, inadequate infrastructure, age, gender and marital status (Table 3). From the results on the Chi-Square (Table 3), the X^2 cal = 1.05, while the X^2 tab (df = 7) at 0.05 = 14.07. Since X^2 cal (1.05) is < X^2 tab (14.07) at 0.05 level of significant = 14.07, the null hypothesis was accepted. This implied that there is no significant relationship between the constraints influencing male farmers and constraints influencing female farmers' participation in root and tuber crops extension sub-programme in the study area.

Conclusion and Recommendations

The study found that poor incentive, insufficient availability of land, non-membership of co-operative society, inadequate extension workers, inadequate infrastructure and age were the constraints to rural farmers' participation in root and tuber crops extension sub-programme. The study therefore recommends that governments and NGOs should encourage and assist farmers to belong to co-operative society. In order to discourage non-participation of rural farmers, there should be an increase in the incentive for participation and number of extension personnel in the field should also be increased.

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APPENDIX

Table 1: Distribution of respondents according to socio-economic characteristics (n = 99)

Characteristics	Frequency	Percentage (%)	Mean (¯) /Mode
Gender			
Male	52	52.5	Male*
Female	47	47.5	
Age Distribution (years)			
Less than 30 years	5	5.1	
31 – 40 years	16	16.2	46 yrs.
41 – 50 years	57	57.6	
50 years and above	21	21.1	
Marital status			
Single	16	16.2	
Married	64	64.6	Married*
Divorced	4	4.0	
Widow/widower	15	15.2	
Religion			
Christianity	74	74.7	
Islam	2	2.0	Christianity*
Traditional	23	23.2	
Educational Level			
No formal.	20	20.2	
Primary.	33	33.3	Primary education*
Secondary.	31	31.3	
Tertiary.	15	15.2	
Farming Experience (years)			
1 – 9	7	7.1	
10 – 19	13	13.1	
20 – 29	28	28.3	39.8 yrs.
30 – 39	34	34.3	
40 yrs. and above	17	17.2	
Average income/annum (₦ '000)			
1,000 – 50,000	27	27.3	
51,000 – 100,000	20	20.2	
101,000 – 150,000	30	30.3	₦148,500.00
151,000 – 200,000	16	16.2	
201,000 – 250,000	6	6.1	
Farm Size (Ha)			
0.0 – 1.0Ha	27	27.3	
1.1 – 1.5 Ha	32	32.3	1.45 hec.
1.6 – 2.0 Ha	23	23.2	
2.1 – 2.5 Ha	17	17.2	

Note: Values in asterisks implies mode.

Table 2: Constraints to participation of rural arable farmers in agricultural extension programme (n= 99)

S/N	Constraints to participation	Total Score	Mean($\bar{}$)	Remarks
1	Poor incentive	312	3.15*	Agreed
2	insufficient land availability	302	3.05*	Agreed
3	Non-membership of co-operative society	295	2.98*	Agreed
4	Inadequate extension workers	294	2.97*	Agreed
5	Inadequate infrastructure	292	2.95*	Agreed
6	Age	259	2.62*	Agreed
7	Gender	224	2.26	Disagreed
8	Marital status	216	2.18	Disagreed

*Note: The cut-off point ≥ 2.50 implies important. *signifies agreed on rating scale.*

Table 3: Results of Chi-Square (X^2) on the relationship between the constraints of male and female rural farmers to participation in root and tuber crops extension sub-programme, n = 99

Selected Constraints	Male	Female	Total
Poor incentive	159	153	312
insufficient land availability	162	140	302
Non-membership of co-operative society	155	140	295
Inadequate extension workers	152	142	294
Inadequate infrastructure	153	139	292
Age	131	128	259
Gender	112	112	224
Marital status	112	104	216
Total	1136	1058	2194
	X^2 cal = 1.05		
	X^2 tab (df = 7) at 0.05 = 14.07		

Table 4: Detailed computation of Chi-Square calculated value of relationship between the constraints of male and female rural farmers to participation in root and tuber crops extension sub-programme

Fo	**Fe**	**(Fo - Fe)**	**$(Fo - Fe)^2$**	**$\frac{(Fo - Fe)^2}{Fe}$**
159	161.55	-2.55	6.50	0.04
153	150.45	2.55	6.50	0.04
162	156.37	5.63	31.70	0.20
140	145.63	-5.63	31.70	0.22
155	152.74	2.26	5.11	0.03
140	142.26	-2.26	5.11	0.04
152	152.23	-0.23	0.05	0.00
142	141.77	0.23	0.05	0.00
153	151.19	1.81	3.28	0.02
139	140.81	-1.81	3.38	0.02
131	134.10	-3.1	9.61	0.07
128	124.90	3.1	9.61	0.08
112	115.98	-3.98	15.84	0.14
112	108.02	3.98	15.84	0.15
112	111.84	0.16	0.03	0.00
104	104.16	-0.16	0.03	0.00
				$\sum$= 1.05

Table 5: Farmers responses to constraints

Constraints to participation	**SA 4pts**	**A 3pts**	**D 2pts**	**SD 1pts**	**Total score**
Poor incentive	M 80(20) F 92(23)	M 54(18) F 45(15)	M 22(11) F 14(7)	M 3(3) F 2(2)	M 159 F 153
insufficient land availability	M 88(22) F 72(18)	M 51(17) F 45(15)	M 20(10) F 18(9)	M 3(3) F 5(5)	M 162 F 140
Non-membership of co-operative society	M 72(18) F 84(21)	M 54(18) F 33(11)	M 26(13) F 16(8)	M 3(3) F 7(7)	M 155 F 140
Inadequate extension workers	M 80(20) F 76(19)	M 45(15) F 42(14)	M 20(10) F 20(20)	M 7(7) F 4(4)	M 152 F 142
Inadequate infrastructure	M 76(19) F 80(20)	M 48(16) F 36(12)	M 24(12) F 16(8)	M 5(5) F 7(7)	M 153 F 139
Age	M 60(15) F 60(15)	M 39(13) F 39(13)	M 16(8) F 20(10)	M 16(16) F 9(9)	M 131 F 128
Gender	M 40(10) F 44(11)	M 33(11) F 30(10)	M 16(8) F 24(12)	M 23(23) F 14(14)	M 112 F 112
Marital status	M 36(9) F 36(9)	M 30(10) F 30(10)	M 26(13) F 20(10)	M 20(20) F 18(18)	M 112 F 104

Note: M represent Male farmers, F represent Female farmers